ORIGINAL USER'S MANUAL

Carefully read the entire manual before operating your garden shredder!

-Set-up
-Use
-Maintenance
-Accessories

GARDEN SCHREDDER

GSE 20 WOODY / GSB 20 WOODY

CE

We manufacture in Germany

TÜV International Certification
TÜV THÜRINGEN CERT
ISO 9001:2008
15 100 63645
TIC

BGU maschinen

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1. INTRODUCTION

Dear customer,
thank you very much for your trust and preference in buying this garden shredder! You have now joined the BGU worldwide family.

This shredder is available in different versions.

GSE 20 Woody with electric motor
GSB 20 Woody with gasoline engine

Various optional perforated outlet grates are available to match the type of required compost material.

1.1 About the manual

Please take time to read this manual and learn to how operate and maintain the shredder safely. For your easier reading this manual is laid out in several sections. The sections are progressively numbered 1 through 18 and listed on the "content" page. The information, pictures and technical data in this document reflect current or planned product features, functions, and characteristics as of the publication date. Because of on-going product improvements and feature additions, information in this document is subject to change without notice. If you are experiencing a problem or functional trouble on your machine, please read the "trouble-shooting" section to identify possible causes and remedies. If the problem or functional trouble is not listed in the trouble-shooting chart contained in this manual, ask your **Authorized Service Centre** for service. When you order parts maintenance or repair services, your Authorized Service Centre, your dealer or eventually the manufacturer need your machine serial number and engine serial number. These are the numbers that you have recorded on the product identification label of the manufacturer on the machine.

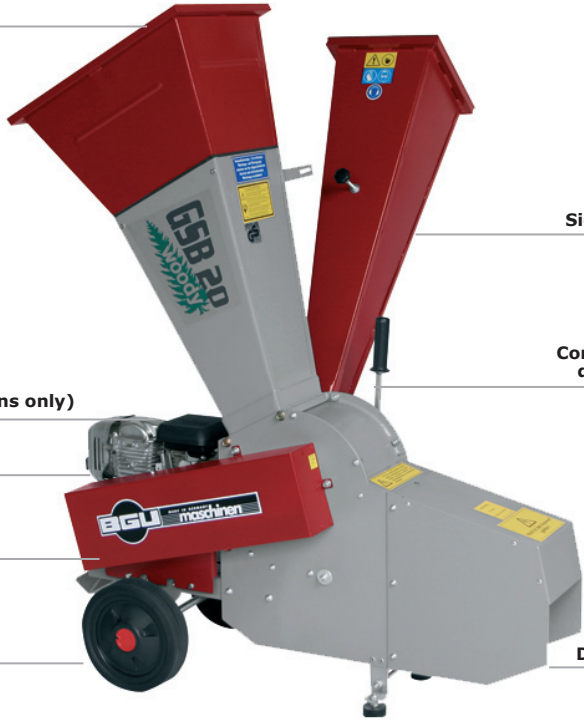
1.2 Delivery and transport claims

Upon receiving the shredder at your place, please check for visual machine damages such as damaged packing or scratched buckled parts. If so, make a remark on all copies of the delivery bill before signing for acceptance.

Also have the truck driver sign al copies of the delivery bill. Should your shipper or the truck driver refuse to accept your claim, fully reject delivery of the machine and make sure to inform us (the manufacturer) immediately. No claims will be taken into account by the shipper or by the insurance company, if a reservation note is not made on the delivery bill. All transport damages must be notified within latest 2 days from delivery. Therefore delivery must be collected and inspected within this term. Later claims shall be disregarded. In case of assumed but not visually clear transport damages make sure to mark the following sentence on the delivery bill: „Reserved delivery due to assumed transportation damages."
Insurance and shipping companies act with extreme caution in case of transport damages and sometimes refuse to accept responsibility. Please make sure to provide clear and exhaustive evidence (photos) of the claimed damages.

Thank you in advance for your help and attention to this matter.

2. PRODUCT OVERVIEW



Upper infeed hopper

Side infeed spout

Control handle for discharge chute

Switch (electric versions only)

Motor (electric motor or gasoline engine)

Belt drive housing

Caster wheels

Discharge chute

3. SAFETY PICTOGRAMS AND WARNING LABELS

1. Personal protection pictogram

„Wear ear plugs and goggles“ when working with your shredder

2. Personal safety label

"Wear suitable protective gloves“

3. Machine safety label „Read before use“

To avoid personal injury or death, carefully read and understand all instructions pertaining to the shredder including the engine manufacturer’s operating and maintenance instruction manual.

4. Machine safety label „Read before use“

To avoid personal injury or death, carefully read and understand all instructions pertaining to the shredder including the engine manufacturer’s operating and maintenance instruction manual.

5. Machine safety label „Please mind this alert sign“

To avoid personal injury or death, carefully read and understand all instructions pertaining to the shredder including the engine manufacturer’s operating and maintenance instruction manual.

6. Operation safety label “

Do not reach inside the infeed hoppers or the discharge chute with your hands. VERY DANGEROUS!“

7. Operation safety label

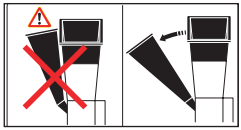
Before setting-up, servicing, maintaining and cleaning the machine, disengage all power and stop the engine.

8. Operation safety label

"Read before use and keep yourself and others at safe distance from the dangerous area!"
This label reminds operator and bystanders of the dangerous area between the tractor and the winch.

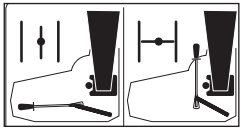
9. Warning label "ATTENTION! Direction arrow!"

This arrow shows the revolution sense of the motor. PLEASE CHECK motor rotation at first start.



10. Operation safety label

Effectively assemble and firmly secure the upper hopper and the side spout on the machine before setup. Make sure that both the infeed hopper and the side spout are duly set in working position before first use.



11. Operation safety label „Discharge chute opened/closed"

12. Production label „Product identification"

This label shows the company details of the manufacturer and the main machine technical data.

13. Identification label „BGU-Logo"

4. SAFETY

Strictly perform installation, set-up, maintenance, cleaning and transportation with the motor switched off and all moving parts firmly secured against accidental operation.

The user shall strictly comply with these operation, set-up, maintenance, repair and trouble-shooting instructions in order to assure safe operation and no damages to the equipment. The owner must understand these instructions and must allow only persons who understand these instructions to operate the shredder. Moreover, we recommend to let the machine be run only and strictly by trained and skilled staff who must be familiar with the applicable occupational safety and health administration rules as well as applicable transportation rules. Incorrect use of the splitter can cause serious injury or death.
No person under 16 years should operate this log splitter.

The machine shall be installed and kept in a suitable location selected by the customer for safest operation.

Make sure that the equipment stands on a safe stable foundation.
The working area around the machine must be kept as clear as possible from surrounding obstacles and slippery foundation floors should be duly treated (do not use saw dust or wood ash for this purpose).

4.1 General safety rules

- NEVER leave the machine unattended with the running motor.
- Switch the motor/engine off, disconnect power and secure the machine from unauthorized use of thirds before leaving the operator's station for any reason.
- Never allow anyone to stand in the dangerous area of the machine while in operation.
- REMEMBER: the operator is responsible for safety of all nearby thirds on site. Never direct the dischargeof material towards bystanders.
- Due and proper illumination of the working site must be provided at all times.
- To ensure stability during operation make sure to choose a flat, dry floor free from any tall grass, brush or other interferences.
- Always wear suitable hearing (ear plugs or muffs) while operating the machine.
- Operators must wear steel toe safety shoes, tear-resistant gloves, safety glasses and snug-fitting work cloths.
- Do not wear loose closing or jewellery that can be caught in moving parts. Long pants, non-slip gloves and sturdy work shoes with non-skid soles are recommended when working outdoors. Wear protective hair covering to contain long hair.
- Sharp blades and hammers provide for optimum shredder performance and prevent dangerous kick-back risk.

- Damaged or buckled blades (very likely to break during operation) should not be used.
- Always wear work gloves to protect your hands while replacing worn blades/hammers.
- Strictly ask a skilled licensed electrician for any intervention on the electric system.
- Operate the shredder in dry conditions. Using an electrical appliance in wet conditions, such as rain or snow, or near a pool or sprinkler system could result in damage to the on/off motor switch or to the electric motor itself.
- Strictly use mechanical tools (i.e. wood stocks) to turn and release jammed or skewed branched/sticks inside the hopper or the side spout. Never reach with your hands inside the hopper or side infeed spout when the machine is running.

Never attempt to remove a jammed piece of wood or material before disconnecting/unplugging the machine from the power and before the cutting tools (blades and hammers) have come to a complete stop.

- Do not try to defeat or override any safety features. Never operate the machine without its protection safeties.
- Do not provide any additional customised protections or tools on board of the machine, other than the ones designed and supplied by the manufacturer.
- Strictly use original spare parts of the manufacturer.

4.2 Mandatory application field

Garden shredders are designed to reduce brush, stalks, tree-bark and garden waste to fine particle size. All other applications are forbidden and considered as "misuse". Make sure that no foreign matter (nails, screws, stones or alike) in or on wooden material gets trapped in the machine.

This machine is not suitable for chipping stones, metals and glass, plastic ropes/lines and other similar workshop material. Grass and vignards waste should be stored for at least one week before shredding.

This shredder can handle up to 65 mm diameter branches through the side infeed spout and up to maximum 50 mm diameter in the upper hopper. This machine is one-man operation only. Never use the machine indoor. It is strictly designed for outdoor or very well aerated places.

Any other use or shredding method is considered by the manufacturer as "misuse". In case of misuse the manufacturer will not be liable for any injuries or damages and the operator will be held entirely responsible.
Misuse will immediately void your warranty!

5. OPERATION

To ensure stability during operation make sure to choose a flat, dry floor free from any tall grass, brush or other interferences. If your floor/ground is soft, you may use a solid board underneath your shredder.
Important! Set your shredder on an even, safe stable and non-slip foundation.

5.1 Setting-up and installing the machine

Attention Danger! Strictly perform installation, set-up, maintenance, cleaning and transportation with the motor switched off and all moving parts secured against accidental operation. Immediately disconnect power off the machine in case of any eventual fault or trouble.

Assemble and securely attach both upper hopper and side infeed spout on the machine before the first setup.
Do not operate the machine until all safeties and protections are duly and efficiently in place.

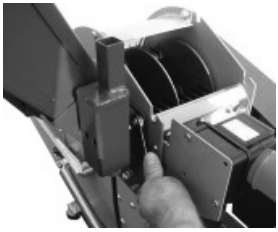


Fig. 1

To install the side infeed spout on the chipper, follow the instructions below:
Install the chipper on a stable and well levelled surface.
Check the counter-blades of the side spout and make sure that they are securely and firmly in place.
Set the spout on the shredder so as to snap the 4 screws in the recesses on the machine side flanks and tighten the screws to fix it (Fig. 1).
Strictly use the standard hardware that is supplied with the machine (shims, lock washers and self-tapping hex nuts SW13).

Fig. 2

Now manually cause the rotor to revolve and make sure that the blade on the rotor disc does not hit against the side spout as it revolves. Now, insert and close the safety contact. For shredders with electric power motor, the safety contact is wired to the on/off switch. For shredder versions with gasoline engine, the safety contact must be wired to the engine.
Insert the safety contact in the contact retainer on the side spout (see figure 2) and secure it with special M4 screws supplied along with the machine (SW 3 and SW 7).

Fig. 3

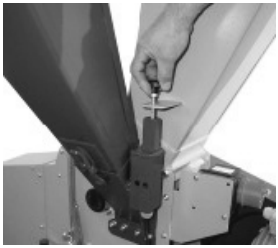


Fig. 4

To install the upper infeed hopper on the shredder, follow the instructions below:
Turn the 4 fixations screws (SW 15) on the upper side of the hopper to make the threaded end of the screws advance by 2-3 turns in their respective holes. Set the hopper on the shredder so to snap the 4 screws in the recesses on the machine side flanks. The lug with a star knob must be located opposite to the side spout. Make sure that the threaded rod is inserted into the bracket of the safety switch. Tighten all 4 fixations screws (see figure 3) while checking that the hopper keeps firmly in position on the shredder and that no gap is formed between the upper hopper and the side flanks.
Now turn the threaded rod located on one side of the hopper to insert it in the contact retainer of the side spout (see figure 4) and, therefore, to close the safety contact. Failure to sufficiently and completely turning the rod, will prevent successful starting of the shredder. Do not move the locknuts of the threaded rod. If the nuts are excessively tight against the thread and the star knob is further turned and inserted in the contact, the safety switch might get damaged. Excessively turning the nuts in the opposite direction, may prevent the threaded rod to reach into the contact and therefore efficient starting of the machine.

5.2 About electric powered shredders

Plug the shredder and connect power. Three-phase, 400V motor versions should be powered using a power cord of at least 1,5mm² section. Unusually long power cords or cord extensions should have a wider section (5x2,5 mm²). If you don't feel familiar with phase changing ask a licensed electrician to help you out.

Phase inverter

Before pressing the green on-switch and starting to work, quickly switch the 400V motor on and off to check that rotation is performed in the direction shown by the arrow on the motor casing. Should rotation be performed in the opposite direction, immediately stop the motor and use a phase inverter to switch the polarity in the plug of main power cord using a phase changer. bPress down the insulating disc inside the plug using a screwdriver and then turn it by 180°. (see figure „Phase inverter ").

5.3 Operating gasoline/engine driven machines

Perform maintenance, cleaning and repairs of gasoline engine in accordance with the instructions of the manufacturer.

Gasoline shredders are equipped with centrifugal clutch in order to greatly facilitate starting of the engine.

The clutch's purpose is to disengage when the engine is idling so that the rotor does not move.
When the engine speeds up (approx 1800 l/min) because the operator has pulled the throttle trigger to begin shredding, the clutch engages so that the rotor can start turning.
The rotor reaches its rated speed when the gasoline engine runs at max speed (approx. 3600 1/min).
You can only switch the engine off, when the engine has slew down and the idle speed is reached.

5.4 Operating safety

The shredder cannot start unless all safeties and guards, the infeed hopper/spout, the discharge chute and the pulley cover are duly in place and functioning.

Check for the threaded rod on the upper infeed hopper to be sufficiently inserted into the contact holder so that the safety contact is disengaged and the shredder can start.

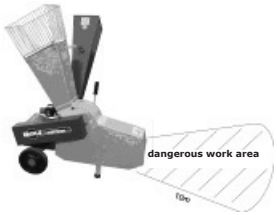


Fig. 5

Attention! Do not allow any bystander in the dangerous area of the machine (see figure 5).
WARNING: shredded material escaping from the discharge-chute work area can be scattered at very high speed.
A low-volt release switch is provided on board to protect the machine in the event of a power blackout. The shredder must be restarted after each blackout.
A thermal switch is provided in the on/off switch of the electric motor in order to stop the machine in the event of a possible overload. In this case, let the shredder standstill and cool for approximately 5.10 minutes before restarting.

When stopping the machine, remember that the rotor will keep turning for about 30 more seconds lag time.
Take due measures to avoid hands contact with the infeed hopper/spout and the discharge chute during this time!

6. USE OF THE SHREDDER

When all safeties, guards and protections are on board, you may start working with your shredder. Dress properly, wear long pants, non-slip gloves, sturdy work shoes with non-skid soles and suitable personal protection implements when working outdoors.

Fig. 6

Switch the shredder on.
Feed brush, stalks, tree-bark, leaves, thin branches and garden waste into the upper hopper to reduce them into fine particle size by means of special hammers and discharge the compost out of the lower chute. The machine optimum intake is set by the manufacturer before shipment. However, check for throughout smooth and fast pulling when feeding long, thin material into the hopper. Thicker branches and sticks (> 30mm) should be fed slower into the machine.

The machine is equipped with a spring-loaded reducing grate. Should a stoppage or an overload situation occur, the grate is flapped forwards so that the crushing rotor can start freely turning around. This system was conceived and designed to prevent shredder overloads.
Move the shredder away, as soon as an excessive quantity of shredded material falls down onto the ground under the chute output.
Should the grate open too frequently or too easily, adjust the pre-loading of the spring by means of the eyebolt. To do so, first adjust the hex-nut (SW 13) of the eyebolt closer to the spring (see „Figure 6“). Various kinds of grates are available to adjust the system to the various kinds of required compost (see “Selecting the best discharge grate”).

The side spout allows chipping thicker tree limbs by means of high-capacity cutting blades. Before feeding limbs into the side spout, make sure to clean it and remove all projecting branches. Now, insert your material into the side spout. As it passes within a heavy steel anvil (rotor), this blade shears off a chip of wood once for every revolution. The own-weight of this compact, but powerful chipping action and the special knife design assure optimized intake and discharge of the shredded material without further pushing it.

6.1 Selecting the best discharge grate

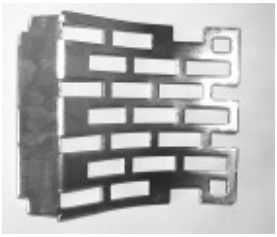


Fig. 7

The machine is equipped with a standard grate suitable for composting bushes and branches (see „Figure 7").
If you require shredding of very wet material (fresh grass, thistles, stinging nettles etc…) preferably use a larger perforated grate, in order to avoid stoppage of the machine. When you are to chip humid, clumpy materials, make sure to mix them with some other wooden material so that the rotor remains clean and no jamming occurs.

Fig. 8

Differently perforated grates allow for adjustment of your compost production (see Figure 7 and 8).
Larger holes correspond to larger compost size.
Should frequent stoppage occur on the discharge chute, it is recommended to select a wider-mesh grate.

Fig. 9

Should material keep jamming in the chipper and failing to reach the discharge chute, flip the grate over. To do so, push down, the lever on one side of the machine. (see „Figure 9").

6.2 Replacing a reducing grate

Fig. 10

Make sure that the machine is fully disconnected and all moving parts are secured before performing any maintenance/repair work on the machine.

To replace a worn-out grate, do the following:

Remove the tension spring by lifting the adjustment handle up. Release the hex nuts (SW 13) on the eyebolt (see „Figure 10") and finally unhook the spring and push the handle down again.

Fig. 11

Fig. 12

Release the hex nuts (SW 13) on the opposite shredder side and remove the bushing (see „Figure 11").

Now pull out the adjustment handle from the side (see „Figure 12"). At this point the grate should be falling off and be freely and easily removable.

To fit a new grate in, insert the handle back into its hole on the shredder flank while firmly holding the grate in place between the two side flanks of the shredder so that the adjustment handle can be slipped into the channel of the grate.
Fit the bushing on the opposite side of the handle and tighten the hex screws (SW 13) back in place making sure to avoid twisting and straining of the handle square tube.
At the end, check the handle for proper functioning: with the handle lifted up, the discharge chute must be closed and it should open as you push it back down.
Hook the spring back in place using the safety eyebolt and respective hex nut to secure the handle.
Provide for due stretching of the spring, making sure that the eyebolt thread stands about 20 mm out.

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7. HANDLING AND TRANSPORTATION

Attention! When handling electric equipment, make sure to disconnect power before performing even just a short-distance handling.

7.1 Long-distance transportation

Fig. 13

Long-distance transportation requires shredder handling asset.

Clean the chipper thoroughly to avoid dirt and splinters to contaminate public roads and walkways.
Release the lock on the side spout and secure it to the hopper by means of the special star-knob.
In this asset, the dimensions of the shredder are smaller. With the spout folded up, the shredder is only 700 mm wide and can be pulled through any door and corridor.
Hold the upper rim of the hopper with one hand and pull slightly back to lean the shredder and start pushing to whatever direction. (see „Figure 13").

7.2 Short-distance transportation

For moving the machine to any other work place at short-distance, you do not need to fold up the side spout.
Simply hold the upper rim of the hopper with one hand and pull slightly back to lean the shredder and start pushing to whatever direction. (see „Figure 13").

8. REPAIRS AND MAINTENANCE

Attention!
Before performing any maintenance/repair work on the machine, make sure that the machine is fully disconnected from power.

8.1 Ordinary maintenance

Make maintenance a regular part of daily operation. The daily maintenance routine needs to include:

- Cleaning of the machine and clearing of all parts from residual wood debris, chips, dust, bark pieces and eventual other waste. Ideally perform a last shredding cycle using some dry branches and bushes whose passage through the drum will produce a sort of a self-cleaning effect.
- Greasing of the centre of rotation of the outlet grate.
- Regularly check the V-belt tension and perform new stretching if required.
- Regularly check the conditions of the blades, the copunter-blades and the hammers for unusual wear.
- Tighten all screws and nuts after the first operation hour.
- Tighten all screws and nuts again after each 100 operation hours.

8.2 Cleaning the machine at the end of a workday

Clean the machine and clear all parts from residual wood debris, chips, dust and bark pieces that may have formed there during normal operation.

8.3 Tensioning and replacing the V-belt

Fig. 14

Attention! Before performing any maintenance/repair work on the machine, make sure that the machine is fully disconnected, that all moving parts have come to a still stand and are duly secured.

To check for correct tensioning of the V-belt, first remove the belt cover. To remove the cover first release the screw 1 (SW 10) and the nuts 3 (SW 10) (see „Figure 14"). A duly stretch V-belt shall not sag more than 10 mm under the pressure of a single finger.
To remove or to stretch the V-belt, first release the 4 fixation screws (SW 13 - SW 17) on the motor without pulling them completely out of their place.

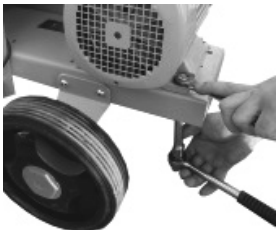


Fig. 15

To replace a worn out V-belt or simply to stretch it, release (but do not pull out) the 4 adjustment screws (SW 13 or 17) of the motor base plate (see „Fig. 15“).

Fig. 16

To stretch a loose V-belt, simply tighten the tensioning screws (SW 17) located on the motor base plate and turn them towards the motor mount (see „Figure 16“) after having released the lock nut (SW 17).

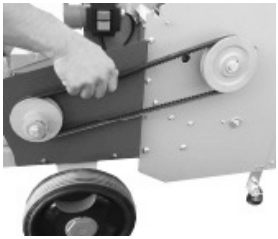


Fig. 17

Now stretch the V-belt till it will sag by approx 10 mm under the pressure of one finger, (see „Figure 17“).

The motor must be parallel to the outer profile of the motor bedplate. Finally tighten again all 4 screws (SW 13 and SW 17) to operate the motor again.

To replace a worn out V-belt, release the 4 adjustment screws (SW 17) so that it will be possible to move the motor back towards the rotor.
Dismount the V-pulley off the belt pulleys.
Now, fit a new one in and provide due tensioning as described above.
Tighten and secure all 4 fixation screws (SW 13 and SW 17).
After complete stretching of the V-belt fit the cover back in place on the chipper.

8.4 Replacing the hammers

Attention! Always use safety work gloves! Strictly perform maintenance, repair and cleaning services after you have successfully disconnected power and after all moving parts on the machine have come to a complete still stand.

As soon as you detect a reduction of the chipper output and productivity, check the hammers and eventually perform regrinding or replacing.

Fig. 18

VERY IMPORTANT: you may not regrind and reuse the same hammers for more than two times. To regrind, dismount and take the hammer off the machine, regrind using a suitable sharpener and finally fit the hammer back in.

To replace a hammer follow the instructions below:

- Release (without fully removing) the 4 fixation screws (SW15) and remove the upper infeed hopper (see figure 15). When doing this, remember to first pull out the threaded stud of the safety switch.

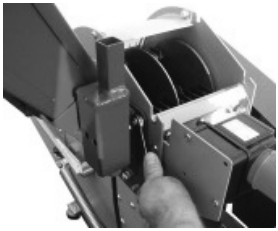


Fig. 19

- Release the 4 hex nuts (SW13) and remove the side spout (see „Figure 19").

Fig. 20

- Unscrew the V-belt cover (SW10) (see „Figure 20").

Fig. 21

- Turn the rotor till the hammer pivots becomes visible through the opening.
- Release and pull out the countersunk screw (SW 6) of the hammer pivots (see „Fig. 21")

Fig. 22

Please note: countersunk screws are securely seated by means of high resistance hardware loctite. Before attempting to remove them, use an hot air gun (or similar tools) to warm them up. (see „Figure 22“).

- On the opposite screw side you will find a free seating area on the hammer shafts for use of a forked key (SW13) that you can use to hold the rotor shaft firm. (see „Figure 21“)
- Release the hex screw (SW 6) to pull them out.

Fig. 23

- On the side flank of the belt cover there is a access opening (large hole). Keep turning the drum till you can pull it out of through this opening. Press the shafts down and let let pop-up before pulling it out. (see „Figure 23“).

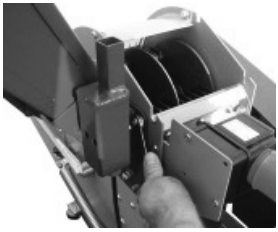


Fig. 24

- Remove hammer and spacer from the shafts and lay them on the side in the same dismount sequence.
- When fitting the new hammer in, press and hold the shafts against the opposite side as the access opening and fit the new hammer in, through the same access.
- While fitting the new hammer in, make sure to have a spacer always set between one and the other hammer.
  IMPORTANT: assemble the hammers and bushings back on the chipper in the order as they were taken out to avoid eventual possible unbalanced rotor weight!
- Secure all hammer fixation screws using high resistance thread glue.
- Hand turn the rotor to make sure that no hammer hits against the shredder walls or other components and in that case grind excess material off.
- After replacing the hammers of all three shafts, reassemble the side spout by tightening the screw (see „Fig. 24“).
- Reassemble the side spout and make sure that the threaded stud fits back into the safety contact holder, tighten all 4 hex screws (SW 15) by the original torque (see „Figure 25“).
- Screw the belt cover back in place (see „Figure 26“).
- Turn the threaded stud inside the contact holder.
- Start the shredder. Failure of the machine to properly start, turn the stud to further progress inside the contact holder turn until the safety switch is engaged.

Fig. 25

Fig. 26

8.5 Replacing the side cutter knife

Attention! Always use safety work gloves! Strictly perform maintenance, repair and cleaning services after you have successfully disconnected power and after all moving parts on the machine have come to a complete still stand.

Fig. 27

Please note: the grinding angle of the side cutter knife is 40°!

To replace the cutter knife follow the instructions below:

- Release (without fully removing) the 4 fixation screws (SW15) and remove the upper infeed hopper (see figure 27). When doing this, remember to first pull out the threaded stud of the safety switch.

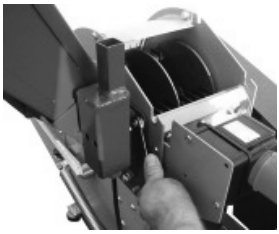


Fig. 28

- Remove the side spout by releasing the 4 hex screws (SW 13) (see „Fig. 28")

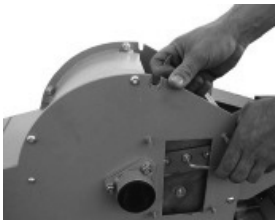


Fig. 29

- Turn the rotor till the knife becomes visible through the opening (see „Fig. 29").
- Release the countersunk screw (SW 5) of the knife and pull it out **Please note:** countersunk screws are securely seated by means of high resistance hardware loctite. Before attempting to remove them, use an hot air gun (or similar tools) to warm them up.
- Replace the knife.
- Secure all knife countersunk screws using high resistance thread glue.
- After replacing the cutter knife, firmly screw the side spout back in place (see „Fig. 28")
- Hand turn the rotor to make sure that no hammer hits against the shredder walls or other components and in that case grind excess material off.
- Reassemble the upper hopper and make sure that the threaded stud fits back into the safety contact holder, tighten all 4 hex screws (SW 15) by the original torque (see „Figure 27").
- Turn the threaded stud inside the contact holder (see „Fig. 30")
- Start the shredder
- Failure of the machine to properly start, turn the stud to further progress inside the contact holder turn until the safety switch is engaged.

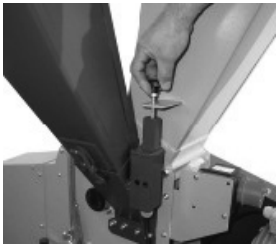


Fig. 30

8.6 Replacing the counter-knife of the side spout

Fig. 31

- Release (without fully removing) the 4 fixation screws (SW15) and remove the upper infeed hopper (see figure 31). When doing this, remember to first pull out the threaded stud of the safety switch.

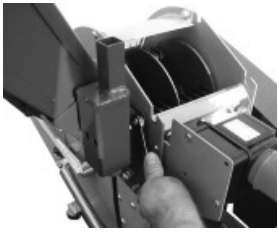


Fig. 32

- Remove the side spout by releasing the 4 hex screws (SW 13) (see „Fig. 32")
- Release both countersunk screws (SW 5) of the counter-knife and remove the knife (see „Fig. 33").
  Please note: countersunk screws are securely seated by means of high resistance hardware loctite and are hard to remove.
- Now, fit the new counter-knife in.
- Secure all knife countersunk screws using high resistance thread glue.

Fig. 33

- After replacing the counter-knife, firmly screw the side spout back in place (see „Fig. 32").
- Hand turn the rotor to make sure that no hammer hits against the shredder walls or other components and in that case grind excess material off.

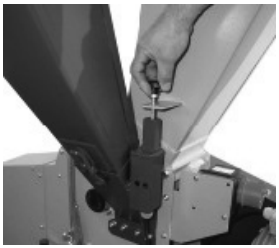


Fig. 34

- Reassemble the upper hopper and make sure that the threaded stud fits back into the safety contact holder, tighten all 4 hex screws (SW 15) by the original torque (see „Figure 31").
- Turn the threaded stud inside the contact holder (see „Fig. 34")
- Start the shredder
- Failure of the machine to properly start, turn the stud to further progress inside the contact holder turn until the safety switch is engaged.

9. DISMOUNTING AND DISCARDING AN OBSOLETE MACHINE

When the shredder is fully obsolete and cannot be of any longer use, it should be duly dismounted ahead of discarding. Certain components need deactivation and dismantling in order to assure that no further use is made by other parties and that no worn out parts are recycled for other applications.

During dismantle be alert for possible recyclable materials and components that belong to differentiated waste collection procedures applicable in your country.

The manufacturer is not liable and undertakes no responsibility for personal injuries or damages that may result from the recycling of worn out machine parts for eventual reuse in other applications different than originally stated in this manual.

Dismantling procedure:
Take good note please: each and every dismantling task must be performed by authorized service centres or trained skilled staff only!
• Pull the machine down into single components
• Lock and clamp all moving machine parts
• Deliver each single component only to authorized waste management facilities
• Drain oil and fuel out of respective tanks and lines before disposal of the machine
• Remove rubber and plastic parts from the machine that must be separately disposed

Deactivated, clamped moving/driving parts and components are of no further risk and danger.

Electric components must be separately disposed to avoid substantial environmental threat. In the event of the fire on the electric deployment system of the machine, use of an explosion-proof extinguish system is required (for example powder fire extinguishers).

10. TECHNICAL DATA

Technical Data	Unit of measurement	GSE 20 Woody	GSB 20 Woody
Power P1 (E-Motor)	kW	3,8	
Power (gasoline engine)	kW		3,7 (5,0 PS)
Motor speed	1/min	2860	3600
Rated voltage	V	400	
Rated current	A	6,4	
Frequency	Hz	50	
Power cord section	mm²	2,5	
Max. branch diameter (side spout capacity)	mm	65	65
Max. branch diameter (hopper capacity)	mm	50	50
Rotor diameter	mm	300	300
Rotor width	mm	200	200
Rotor speed	1/min	2400	3100
Number of hammers	pcs	30	30
Number of side cutter knives	pcs	1	1
Side spout, infeed size	mm	250 x 250	250 x 250
Hopper, infeed size	mm	450 x 350	450 x 350
Length	mm	1150	1150
Width with down-folded spout	mm	1050	1050
Width with up-folded spout	mm	700	700
Height	mm	1500	1500
Weight	kg	approx. 122	approx. 102

10.1 Noise emissions

Noise emissions were measured in accordance with the European directives for the measurement of noise emissions on the workplace. The measurement was performed by external authorized certification bodies in compliance to the applicable Standards based on applicable rules for agricultural and forestry equipment.

The detected noise levels were:

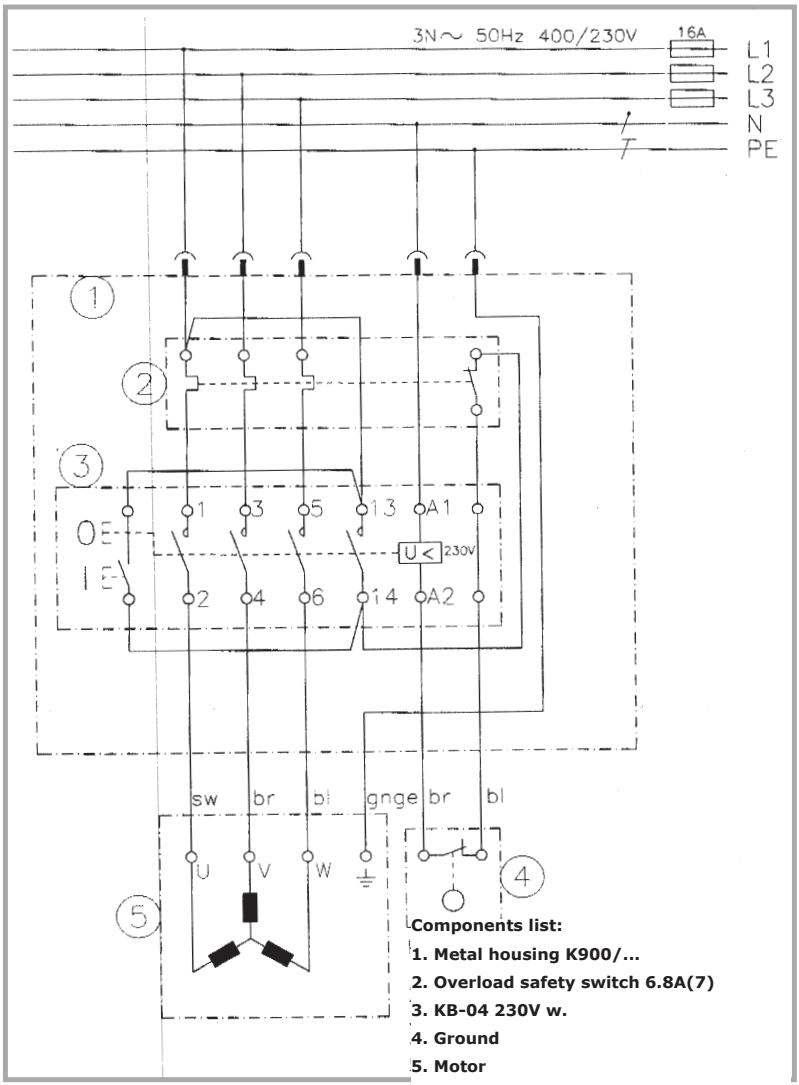
	GSE 20 Woody	GSB 20 Woody
Idle	80 db(A)	95 db(A)
Full load	104 db(A)	104 db(A)

Hearing protectors must be wore!

11. WIRING DIAGRAM

Works on the shredder electric system should be strictly performed by skilled electricians!

Wiring diagram (400 V)



Components list:

1. Metal housing K900/...
2. Overload safety switch 6.8A(7)
3. KB-04 230V w.
4. Ground
5. Motor

12. TROUBLESHOOTING

This table contains some important tips to help you quickly identifing possible causes of malfunctioning and eventual remedies.
Setting, cleaning, repairing, adjustment and maintenance works on the chipper must be strictly performed in accordance with the applicable safety standards.

Type of malfunction	Origins of the problem	Possible remedies
Motor won't start	- Power problem - Faulty switch - Faulty/damaged motor - Failure to close the contact	- Check power cord - Replace switch - Replace motor - Let the threaded stud further progress in the contact holder
The E-Motor turns but in the wrong direction	- The switch is wrongly phased	- Invert phases (use phase inverter)
The gasoline engine will not start	- No gasoline in the tank - Defective spark plugs - Defective engine - Failure to close the contact	- Fill the tank up - Replace spark plugs - Replace engine - Let the threaded stud further progress in the contact holder
The chipper keeps jamming	- Excessive machine load - Rotor is jammed	- Feed less material - Do not exceed branches max diam. - Clean the drum (rotor)
The low volt release switch keeps switching the unit off	- Shredder overloaded - Power cord too long as compared to the section	- Feed less material in - Use a cord with bigger section (2,5mm²) - Use a shorter cord
Insufficient or discontinuous shredder output	- V-belt slips - Hammers are wore out - Cutter knife is dull - Motor runs with 2 phases	- Stretch the V-belt - Replace hammers - Replace cutter knife - Check the electric connection
No automatic intake in the side spout	- Cutter-knife is dull	- Replace or grind the knife
Shredded material too large or too small	- You are using the wrong grate - Perforated grate is open loose	- Replace the grate - Close the grate

13. OTHER AREAS OF POSSIBLE RISKS

13.1 Mechanical dangers

All moving parts on the machine (hammers, knives and V-belts) are protected by permanent safety guards minimising risks and dangers related to moving parts on the machine. No accidental removal of the guards will be possible, as special tools will be required to dismount them.

WARNING: operating the shredder without the safeties will increase your risk of getting injured while operating the machine.

13.2 Electric dangers

All machine parts staying under voltage are duly insulated or sealed inside a fixed casing to avoid accidental contact. For safety reasons all fixed casings can be only removed using special tools and equipment.

WARNING: removing a fixed protection casing when the machine is running or without having priory cut the power off, may result into major danger of electrical shock!

14. CONSUMABLES

Here below is a list of the most frequent sparest required for this machine at normal operating conditions:

Cutting knives	Code No. 18941
Rotor hammer	Code No. 18942
Hammer shaft	Code No. 18938
Counter-knife of the side spout	Code No. 19054
Hopper rubber lining	Code No. 18937
V-belt	Code No. 53847

When placing an order for spare parts please always show the respective part number on one side of each quantity. **Purchase orders can be submitted both in writing and on the phone to your dealer.**

15. LEGAL WARRANTY

All BGU machines are covered with warranty terms in accordance with the law. Customers should promptly notify the manufacturer eventual material or production claims on their detection. While asking for warrantynservice, customer should show copy of their purchase invoice or receipt.

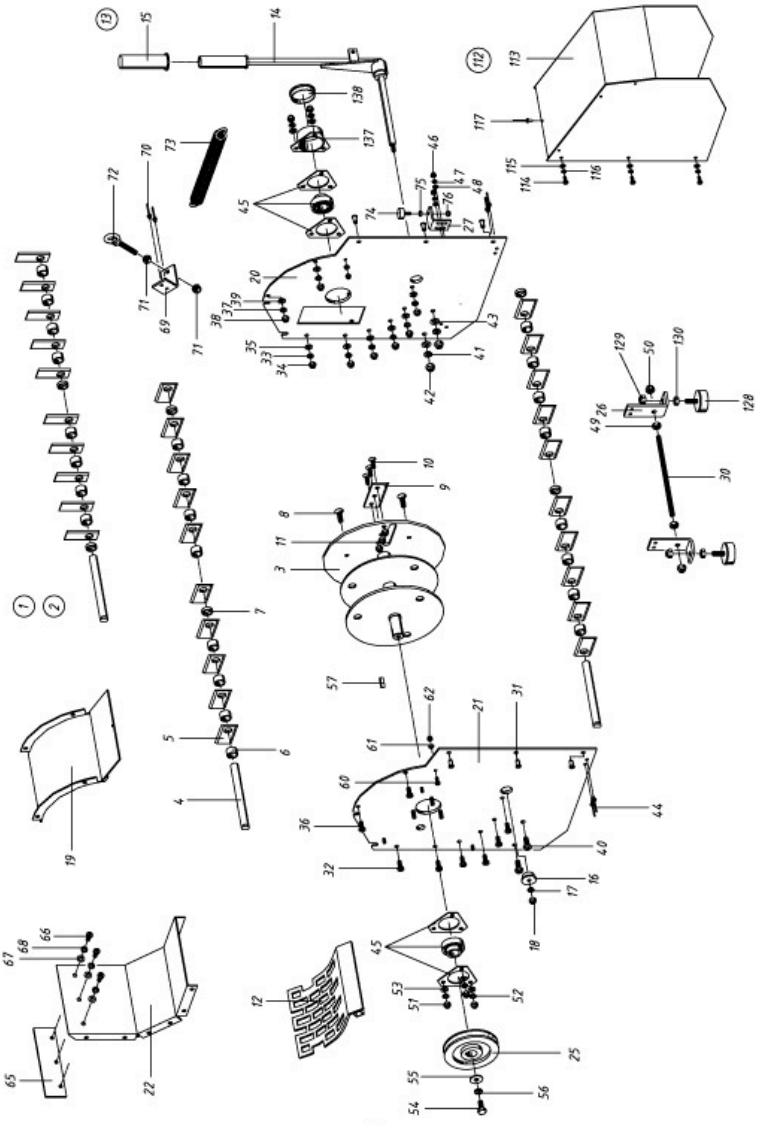
The warranty does not cover for faults due to natural wear, temperature or weather agents as well as defects caused by misuse, faulty installation or set-up, improper operations and lubrication or act of vandalism. No warranty will be given on parts damaged by improper handling, use and application. The manufacturer is further not responsible for warranty service on machines used for other applications as mentioned in this manual, altered or modified by the customer or other thirds, or overloaded.

No warranty applies to consumable parts (for instance: V-belts, blades, tools, and other implements) and to adjustment/calibration works.

16. EXTENDED WARRANTY

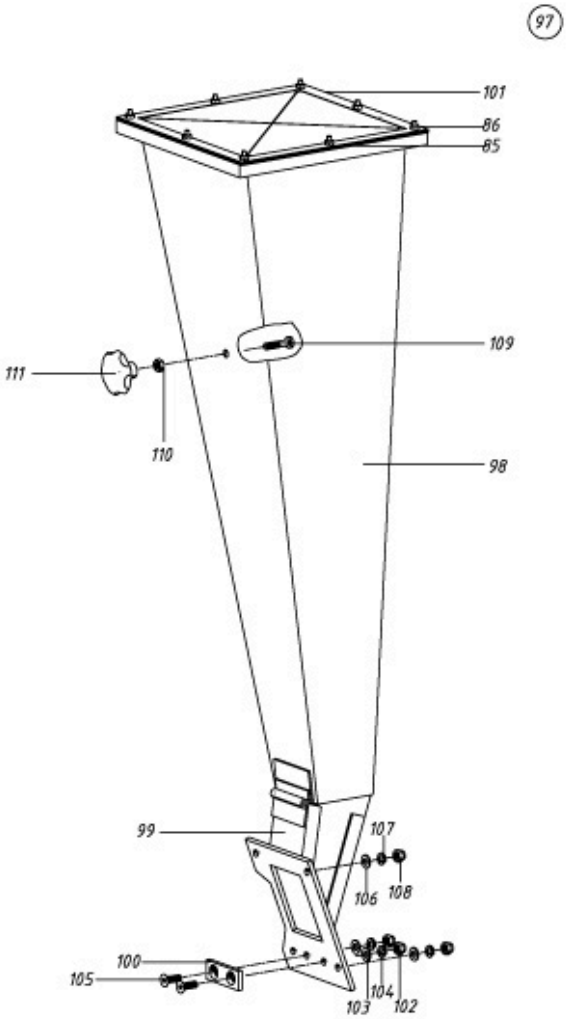
All SŰMA consumer products are covered with 24 or 12 months total warranty from the date of purchase for private/industrial users and rentals. This warranty extension does not substitute nor void the legal warranty. Customers should promptly notify eventual material, production or workmanship claims on their detection. While asking for warranty service, customers should show copy of their purchase invoice or receipt. Buyer's address and type/model of equipment must be clearly stated in the case of industrial users/contractors/dealers. All claims related to material or production failures during the total warranty time, shallbe repaired notwithstanding eventual user's faulty/ wrong operation or maintenance.

17. SPARE PART LIST

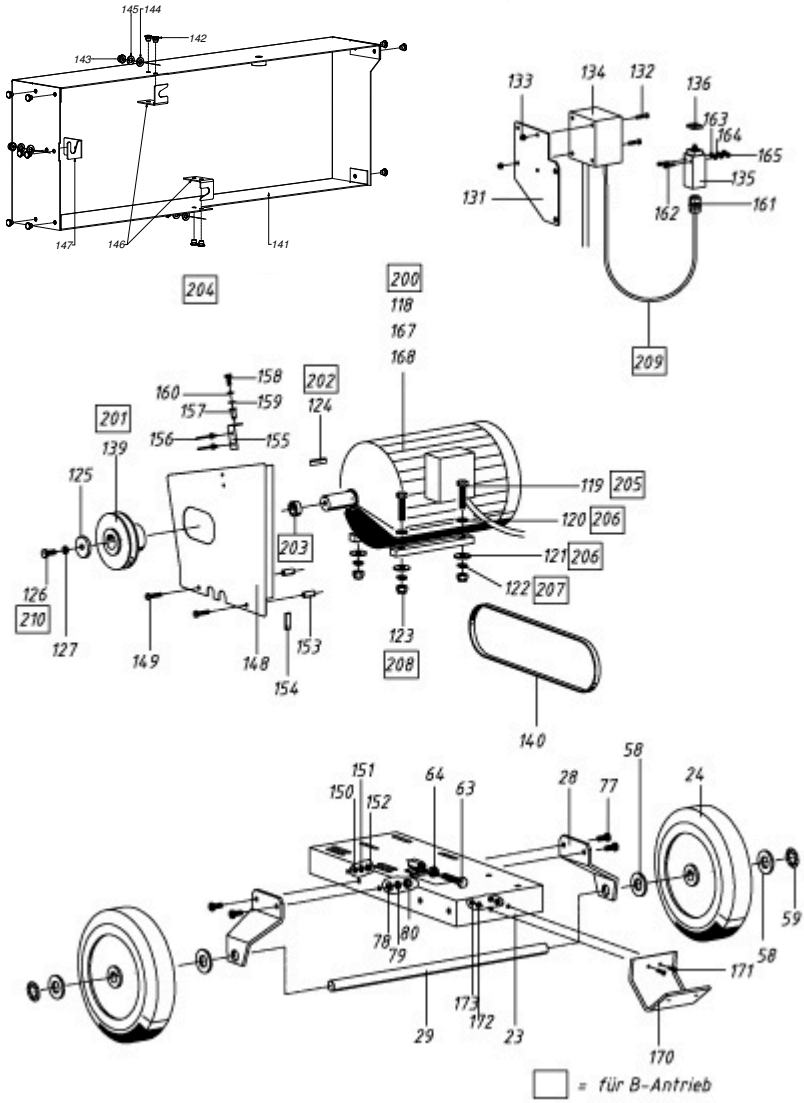


GSE/B 20 Woody, MAIN FRAME

GSE/B 20 Woody, SIDE SPOUT



GSE/B 20 Woody, POWER DRIVE



Pos.	Description	Nr.	DIN Remarks	Dimensions/size
1	**Main frame, complete assembly**	**18903**		
2	**Cuttin disc, complete assembly**	**18904**		
3	Cutting disc, unit	18936		
4	Shaft	18938		
5	Hammer	18942		
6	Long spacer	18939		
7	Short spacer	18940		
8	Cross recessed countersunk flat head	53858	DIN 7991	M 10x20
9	Cutting knife	18941		
10	Cross recessed countersunk flat head	53851	DIN 7991	M 8x20
11	Self-tapping hex nut	51607	DIN 985	M 8
12	Discharge plate	18911		
13	**Handle bar, complete assembly**	**18912**		
14	Handle bar	19048		
15	Handle	52110		di=25, l=110
16	Guide bushing	18929		
17	Split washer	51706	DIN 127	B 8
18	Self-tapping hex nut	51607	DIN 985	M 8
19	Guide plate	18916		
20	Flank plate, infeed side	18914		
21	Flank plate, power drive side	18915		
22	Rear guide plate	19082		
23	Motor bracket	19195		
24	Solid rubber wheel w. bearing	53280		250x60x20
25	V-belt sheave	18926		
26	Rubber foot seat	19065		
27	Angle iron	18928		
28	Wheel mount	18925		
29	Axle	19066		
30	Threaded rod	19064		
31	Galvanized blind rivet nut	51616		M6 L=14
32	Oval-head screw with hex recess	53103	DIN 7380	M 8x20
33	Split washer	51706	DIN 127	B 8
34	Self-tapping hex nut	51607	DIN 985	M 8
35	Washer	51648	DIN 125	8,4
36	Oval-head screw with hex recess.	53103	DIN 7380	M 8x20
37	Split washer	51706	DIN 127	B 8
38	Self-tapping hex nut	51607	DIN 985	M 8
39	Washer	51648	DIN 125	8,4

Pos.	Description	Code no.	DIN Remarks	Dimensions/size
40	Oval-head screw with hex recess.	53101	DIN 7380	M 10x25
41	Split washer	51707	DIN 127	B 10
42	Self-tapping hex nut	51608	DIN 985	M 10
43	Washer	51649	DIN 125	10,5
44	Standard blind rivet	53857	DIN 7337	A 6,4x18
45	Flanged bearing housing	53846		D=95,3 L=28,5
46	Self-tapping hex nut	51606	DIN 985	M 6
47	Split washer	51705	DIN 127	B 6
48	Washer	51647	DIN 125	6,4
49	Hex nut	51594	DIN 934	M 10
50	Self-tapping hex nut	51608	DIN 985	M 10
51	Self-tapping hex nut	51607	DIN 985	M 8
52	Split washer	51706	DIN 127	B 8
53	Washer	51648	DIN 125	8,4
54	Hex screw	51460	DIN 933	M 10x16
55	Washer	51698	DIN 9021	10,5
56	Split washer	51707	DIN 127	B 10
57	Feather key	51720	DIN 6885	A 8x7x20
58	Washer	51654	DIN 125	21
59	Lock washer	51234		d=20 D=36,6
60	Oval-head screw with hex recess	53096	DIN 7380	M 6x20
61	Hex nut	51591	DIN 934	M 6
62	Self-tapping hex nut	51606	DIN 985	M 6
63	Hex screw	51474	DIN 933	M 10x90
64	Hex nut	51594	DIN 934	M 10
65	Stop plate	19211		
66	Oval-head screw with hex recess	53180	DIN 7380	M 8x12
67	Washer	51648	DIN 125	8,4
68	Split washer	51706	DIN 127	B 8
69	Adjustable angle iron	19228		
70	Standard blind rivet	53857	DIN 7337	A 6,4x18
71	Hex nut	51592	DIN 934	M 8
72	Eye bolt	53904		M 8x60
73	Tension spring	51900	DIN 2097	4,5x23,5x217 if 40
74	Rubber shock-absorber	53906		D=25 H=10
75	Hex nut	51591	DIN 934	M 6
76	Self-tapping hex nut	51606	DIN 985	M 6
77	Oval-head screw with hex recess	51552	DIN 7380	M 8x25
78	Washer	51648	DIN 125	8,4

Pos.	Description	Code no.	DIN Remarks	Dimensions/size
79	Lock washer	51706	DIN 127	B 8
80	Self-tapping hex nut	51607	DIN 985	M 8
81	**Hopper complete assembly**	**18905**		
82	Hopper unit	19050		
83	Hopper upper piece	19250		
85	Rubber lining 18937			
86	Standard blind rivet	51845	DIN 7337	A 4,8x12
88	Fixation screw	53860	B 151	M 10x20
89	Threaded rod	19225		
90	Hex nut	51592	DIN 934	M 8
91	Star knob w. threaded bore	50996		D=40 M8
92	Disconnector	19241		
93	Round-head screw	51295	DIN 603	M 6x20
94	Washer	51647	DIN 125	6,4
95	Lock washer	51705	DIN 127	B 6
96	Self-tapping hex nut	51606	DIN 985	M 6
97	**Side spout assembly**	**18906**		
98	Side spout	19052		
99	Connection sleeve, complete assembly	19199		
100	Counter-knife	19054		
101	Frame	20488		
102	Self-tapping hex nut	51607	DIN 985	M 8
103	Washer	51648	DIN 125	8,4
104	Lock washer	51706	DIN 127	B 8
105	Cross recessed countersunk flat head	53856	DIN 7991	M 8x25
106	Washer	51648	DIN 125	8,4
107	Lock washer	51706	DIN 127	B 8
108	Self-tapping hex nut	51607	DIN 985	M 8
109	Oval-head screw with hex recess	53907	DIN 7380	M 8x50
110	Hex nut	51592	DIN 934	M 8
111	Star knob w. threadere bore	50996		D=40 M8
112	**Discharge chute assembly**	**19218**		
113	Riveted chute	19215		
114	Oval-head screw with hex recessech.	53040	DIN 7380	M 6x16
115	Washer	51647	DIN 125	6,4
116	Lock washer	51705	DIN 127	B 6
117	Multi-purpose blind rivet	51847		d=4,8 l=11
118	Motor	50748		
119	Hex screw	51464	DIN 933	M 10x35

Pos.	Description	Code no.	DIN Remarks	Dimensions/size
120	Washer	51649	DIN 125	10,5
121	Washer	51698	DIN 9021	10,5
122	Lock washer	51707	DIN 127	B 10
123	Self-tapping hex nut	51608	DIN 985	M 10
124	Feather key	51721	DIN 6885	A 8x7x28
125	End washer	19080		
126	Hex screw	53798	DIN 933	M 8x25
127	Lock washer	51706	DIN 127	B 8
128	Rubber foot	18908		
129	Self-tapping hex nut	51608	DIN 985	M 10
130	Hex nut	51594	DIN 934	M 10
131	Switch plate	19214		
132	Raised pan head screws w. cross-recess	51564	DIN 7985	M 5x45
133	Self-tapping hex nut	51605	DIN 985	M 5
134	Motor safety switch	53887		00180362
135	Position switch	53888		
136	Driver rod	53889		
137	Cover plate	19059		
138	Round lamellar plug	53848		
139	Motor belt pulley	18909		
140	V-belt	53847	DIN 7753	XPA 1207 Lw
141	Belt cover	19077		
142	Multiple blind rivet	51847		d=4,8 l=11
143	Self-tapping hex nut	51606	DIN 985	M 6
144	Washer	51647	DIN 125	6,4
145	Lock washer	51705	DIN 127	B 6
146	Steel iron 4	25323		
147	Steel iron 5	25324		
148	Rear belt cover	19078		
149	Hex screw	51435	DIN 933	M 6x40
150	Washer	51647	DIN 125	6,4
151	Lock washer	51705	DIN 127	B 6
152	Self-tapping hex nut	51606	DIN 985	M 6
153	Spacer bushing	19081		
154	Corner guard	19256		
155	Steel iron 1	19079		
156	Multiple blind rivet	51847		d=4,8 l=11
157	Galvanized blind rivet nut	51616		M6 L=14
158	Hex screw	51429	DIN 933	M 6x16

Pos.	Description	Code No.	DIN Remarks	Dimensions/size
159	Washer	51647	DIN 125	6,4
160	Lock washer	51705	DIN 127	B 6
161	Cable gland	53895		M 20x1,5
162	Cylinder head screw	51326	DIN 912	M 4x30
163	Washer	51645	DIN 125	4,3
164	Lock washer	51703	DIN 127	B 4
165	Self-tapping hex nut	51604	DIN 985	M 4
166	Chassis clamp	51929		43x12x0,8
167	Cable gland	50826		Pg 16
168	Adaptor	11324		
169	Discharge plate, accessory	19242		
	Parts for GSB 20 Woody			
200	Gasoline engine	53897		
201	Centrifugal clutch	56279		
202	Feather key	52725	DIN 6885	A 5x5x28
203	Spacer bushing	18320		
204	V-belt cover	19325		
205	Hex screw	51451	DIN 933	M 8x40
206	Washer	51697	DIN 9021	8,4
207	Lock washer	51706	DIN 127	B 8
208	Self-tapping hex nut	51607	DIN 985	M 8
209	Wiring for safety switch connection	19315		

18. EC – STATEMENT OF COMPLIANCE

to the EC Machines Directive No. 2006/42 and EMV (Low Voltage) Directive 2004/108

We hereby declare that the equipment described in this manual responds in full to the actual version brought on the market. We, the manufacturer further declare that this equipment was duly designed and manufactured in accordance with the actual European Safety and Health Standards settled by the relevant EEC directives as well as the latest electromagnetic standards issued by the European Council of 3.5.89 and later enforced by all member states. This statement of compliance does not apply to customer modifications of the equipment without manufacturer's written approval.

Machine type:	**Garden shredder/chipper**
Models:	**GSE 20 Woody / GSB 20 Woody**
Production No.:	see Manufacturer plate
Applicable European Standards:	EC Machine Directive 42/2006 EC Directive 108/2004 (modified by following: EC 91/263, EC 92/31 and EC 93/68) EC Low Voltage Directive 68/93, Ec 95/2006 Noise emissions to EC 14/2000
Other applicable Standards:	Full compliance to the European safety rules was assured compliance to the following harmonised Standards: EN 294, DIN EN 61000-3-2:2006, DIN EN 61000-3-3, prEN 13683 **GSE 20 Woody:** Measured Level of static pressure increase (Lwa) : 112 dB(A) Guaranteed sound pressure level (LD) : 114 dB(A) **GSB 20 Woody:** Measured Level of static pressure increase (Lwa) : 108 dB(A) Guaranteed sound pressure level (LD) : 111 dB(A)

Person responsible for the technical documents: Jörg Kernstock (Management)

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Nordhausen 05.08.2011

Date

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Official user's language: English (User's release)

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